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REGIONAL MOMENT TENSOR SOLUTIONS IN GREECE AND SURROUNDING AREAS USING NOA - HL BROADBAND WAVEFORMS: AN APPLICATION DURING THE PERIOD 2005-2006

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Monitoring of seismic activity in the Greek region, as well as detailed knowledge of seismotectonic properties, is of paramount importance for the effective mitigation of seismic hazard. Since early 2000 the National Observatory of Athens, Institute of Geodynamics (NOA-IG) operates a digital network (HL) of broadband (up to 20-30 s) three-component seismometers that covers most parts of Greece (see http://bbnet.gein.noa.gr). This has resulted in the accumulation of a large set of high-quality digital waveforms that can potentially be used for moment tensor derivation. In order to check the feasibility of such a procedure and consistency of the results, we modeled waveforms by applying a linear time-domain deviatoric moment tensor inversion method with a point-source approximation for earthquakes (M_L >3.7) that occurred during the period 2005-2006. We used different 1D velocity models for Green's function calculations for different stations in an effort to mimic the three-dimensional velocity variation. In this way we have obtained more than 200 moment tensor solutions for earthquakes that occurred in Greece and the adjacent regions (southern Albania, Bulgaria, FYROM, western Turkey). A preliminary analysis of these results is presented in terms of: (1) comparison of moment magnitudes we derived with local magnitudes estimated by NOA-IG and moment magnitudes reported by other sources (e.g. Harvard CMT group, ETH), (2) direct comparison of focal mechanisms we obtained with the solutions reported by Harvard or ETH for the same events using as measure of similarity the Kagan angles, (3) regional consistency of our moment ten-

sor solutions with previously published seismological, geodetic and geological observations in the Greek region. The results of such comparisons are encouraging and suggest that both waveform data and velocity models are adequate for reliable routine moment tensor estimation in Greece.